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Some Communications, confirming the present Appearance of the Ring about Saturn, by M. Hugen de Zulechem and Mr. Hook.

THe former writeth in a Letter of his, dated at the Hague Octob. 31. 1670. ft. n. That he observ'd *Saturn* with his Telescope of 22 feet, a little before he came out of *France*, which was the last Summer of this 1670. and saw his Figure to be very conform to what it should be according to his *Hypothesis*; viz. the *Anæ* or Arms to be very narrow, insomuch that their opening appear'd not but very obscurely.

The *Latter* hath observed the same in *London*, Septemb. 16. ft. v. as is represented in *Tab. 1. Fig. 3.*

An Extract out of a lately Printed Epistolary Address, made to the G. Duke of Tuscany touching some Anatomical Engagements, of Laur. Bellini, Ord. Anat. Prof. at Pisa.

I Promise (saith that learned Anatomist) to give the whole Doctrin of *Respiration*, and to comprehend it in that order, that if I am not deceived in my own affair, the matter of the principal part of the *Vreast*, and the whole *Fabrick* of the *Lungs* shall be made certain and evident, forasmuch as all things do so aptly answer to one another, and are grounded upon Geometrical Principles. The sum of it is this in the Authors own words.

Fuit in Asperam Arteriam aer, momento composito ex gravitate & vi laterali, eaque Aeri, extrinsecus superficiem pectoris circumprimenti, æquiponderat. Hinc musculis Inspiratoriis sese contrahendi potestas permittitur; unde Costarum elevatio ac dilatatio, & aucta Pectoris amplitudo: Tum penitior Aeris irruptio, & expansio ductuum pulmonarium; quod totum in Inspiratione contingit.

Mox proprio pondere concidentibus supra tumidum Pulmonem costis, spatium Pectoris fit Angustius, & ipsarum ac diaphragmatis vi Pulmo comprimitur; Aerque partim per os extrudatur,

ditur, partim ad minima usque vascula adigitur, si quorum angustias penetrare proprio pondere non potuit; quousque totus Pulmo detumescat, restitante solum in ejus vesiculis expansa Aeris portione: quæ series est Expirationis. Hinc resistentiæ minoris occursum potest externus Aer rursus irruere, eoque ordine, Respirationis opus peragere.

Hæc autem ut evincantur, ostendam prius, Musculos pectoris non modò dispositos ad leges Mechanicas, adeoque pro majori superanda resistentiâ validiores, pro minori debiliores, verùm etiam, quadam interioris Geometriæ peritiâ, ut sese in Inspiratione contrahentes, figuram Pectoris mulò capaciorem efforment. Costas in Expiratione ex seipsis concidere, figuræ, positionis, atque articulationis beneficio: Diaphragmatis ac Musculi Triangularis fabricam (quantum ex aliorum sciam figuris ac scriptis, nulli cognitam) nec non utriusque usum persimilem; Ex quibus ea omnia evidenter constabunt.

Insuper, Unum esse Usum Aeris in Pulmonibus, ut scilicet à Capillaribus Vasis Arteriæ pulmonariæ ad Capillaria Venæ Sanguinem adigat, seu ex uno sinu cordis in alterum; atque in hoc transitu per pulmones sanguinem solvi.

Neque ita in Homine solum, verum hæc eadem etiam in Brutis ita se habere monstrabimus; Et machinam in Avium costis perelegantem exponemus; quid porro Vicarium Costis in Testudinibus: Idemque obtineri per Aquam, à Piscibus ad bronchias expulsum, quod à cæteris per Aerem, pulmones explicantem.

Hinc verò, quanta & quam facilis Propositionum series, ad Pulmonum omnium figuras, suetus, vulnera, respirationes varias, mutatas, aut impeditas, in Aeris, Pulmonum aut Pectoris statu diverso: Quæ omnia quivis intellegat ex seipso, dummodò id etiam supposuerit, Aerem equo rariorem, & equo densiorem, Respirationi esse ineptum, & sanguinis per pulmones excursus prohibere.

Denique, ex iisdem principiis deducam, probabili ter Fætum in Utero non respirare; quod fortè etiam Geometricè demonstrabo, si Diametros Arteriæ pulmonaris & Anastomosis cum Arteria Magna comparare licuerit.

Addam his Opusculum de Motu atque Usu Bilis, quorum alterum Geometricum est, alterum ex eo pendens, Observationibus illustrandum.

illustrandum. Evincet illud, Fel à Jecore & Vesicula ad intestina fluere; non è converso: nec à Vesicula & Jecore in Cavam, spectatà momentorum diversitate, qua moventur fluida per contractiles & inæqualis amplitudinis tubulos. Unde constabit, Bilem è Vesicula elici non posse, nisi extrinseca aliqua virtute comprimatur, quam ab adstante & distento cibus Ventriculopetam; statuens, Bilem in Vesicula ad digestionis tempus seruari; ac tantum non evidenter ostendens, per ipsam, tum temporis ad Duodenum fluentem, cibum à Ventriculo preparatum in Chylum facessere. Hinc ratio sitûs Vesiculæ, Capsulæ communis in Jecore; cur item ductuum Felleorum aliquot in Vesicula desinant; cur non-nulla Animalia eâdem destituta sint, facile ex præcedentibus explicatur. Adhuc tamen observandus mihi situs Vesiculæ in quotquot occurrant Animalibus, præcipuè Carnei ventriculo præditis. Pancreatis etiam locum pensito, & humorem illius exprimi eodem, quo Bilis, tempore, deduco, ut ab utrisque permixtis Chylus formetur.

Erit hæc, Appendicis loco, Geometricum quiddam, demonstrans, Quâ fieri possit, ut in Vesica Urinaria generentur Conchyliæ spiralia, si per Ureteres exprimatur quid molle aut viscidum, in Vesicâ resistantiam incidens, eaque occasione explicabitur, quo pacto in superficie Terræ similia intorta corpora possint produci, qualia in quibusdam montibus observavi.

So far this Inquisitive Anatomist, which the Publisher (who very much doubteth, whether any Copies of this intimation, Printed at Pisa this very year, besides that one, which lately came to his hands, be to be found in England) thought fit to insert in these Papers, thereby to administer occasion to our dextrous Anatomists here, with all possible diligence and care to pursue, joyntly with that Italian Professour, those important Inquiries about such considerable Subjects, as have been above related; comparing with their Researches in this matter the many notable Experiments, lately published in No. 63. and 64. of these Tracts, made and communicated by the Honourable Robert Boyle.